LISTING OF CLAIMS:

1. (original): A method for encoding a video signal with a variable bit rate, the method comprising:

(a) calculating a complexity for each of a plurality of pictures on the basis of a bit amount and a quantization parameter of a previous frame;

(b) calculating a remaining bit amount for each picture in proportion to the complexity for each picture calculated in (a);

(c) calculating a quantization parameter of a current frame on the basis of the complexity for each picture and the remaining bit amount for each picture calculated in (b); and

(d) comparing the quantization parameter of the current frame calculated in (c) with a predetermined minimum quantization parameter and determining a final quantization parameter.

2. (original): The method of claim 1, wherein the remaining bit amount for each picture is obtained by multiplying the complexity for each picture by a total bit amount of remaining frames for each picture.

3. (previously presented): A method for encoding a video signal with a variable bit rate, the method comprising:

(a) calculating a complexity for each of a plurality of pictures on the basis of a bit amount and a quantization parameter of a previous frame;

(b) calculating a remaining bit amount for each picture in proportion to the complexity for each picture calculated in (a);

(c) calculating a quantization parameter of a current frame on the basis of the complexity for each picture and the remaining bit amount for each picture calculated in (b); and

(d) comparing the quantization parameter of the current frame calculated in (c) with a predetermined minimum quantization parameter and determining a final quantization parameter,

wherein the remaining bit amount for each picture is decided as follows:

$$\frac{X_{Iavg} * N\_I\_rem}{X_{Lavg*} N\_I\_rem + X_{Pavg} * N\_P\_rem + V_{Bavg} * N\_B\_rem} * (R_{I\_rem} + R_{P\_rem} + R_{B\_rem})$$

for an I-picture;

$$\frac{X_{Bavg} * N\_B\_rem}{X_{Lavg*} N\_I\_rem + X_{Pavg} * N\_P\_rem + V_{Bavg} * N\_B\_rem} * (R_{I\_rem} + R_{P\_rem} + R_{B\_rem})$$

for a B-picture; and

$$\frac{X_{Pavg} * N\_P\_rem}{X_{Lavg*} N\_I\_rem + X_{Pavg} * N\_P\_rem + V_{Bavg} * N\_B\_rem} * (R_{I\_rem} + R_{P\_rem} + R_{B\_rem})$$

for a P-picture,

where, X_{Iavg} is an average complexity of the I picture, X_{Pavg} is an average complexity of the P picture, and X_{Bavg} is an average complexity of the B picture, N_I_rem, N_B_rem, and N_P_rem are the number of I-pictures, the number of B-pictures, and the number of P-pictures, in a whole sequence, respectively, and $(R_{I\_rem} + R_{P\_rem} + R_{B\_rem})$ is a remaining total bit amount.

4. (original): The method of claim 1, wherein the quantization parameter of the current frame is obtained by dividing an average complexity for each picture by the remaining bit amount for each picture.

5. (original): The method of claim 1, wherein in determining the final quantization parameter, the predetermined minimum quantization parameter is determined to be the final quantization parameter if the quantization parameter of the current frame is smaller than the predetermined minimum quantization parameter, and the quantization parameter of the current frame is determined to be the final quantization parameter if the quantization parameter of the current frame is greater than the predetermined minimum quantization parameter.

6. (original): An apparatus for encoding a video signal, the apparatus comprising:

a discrete cosine transform (DCT) unit which performs DCT on input image data in units of macroblocks;

a bit rate controller which determines a quantization parameter of a current frame, on the basis of a bit amount for each picture and a complexity for each picture generated per frame;

a quantization unit which quantizes the image data subjected to DCT by the DCT unit according to the quantization parameter determined by the bit rate controller;

a dequantization unit which dequantize the image data quantized by the quantization means;

an Inverse Discrete Cosine Transform (IDCT) unit which performs IDCT on the image data dequantized by the dequantization unit;

a frame memory which stores the image data subjected to IDCT by the IDCT unit, in units of frames; and

a movement estimation and compensation unit which estimates a movement vector and a Sum of Absolute Difference (SAD) using image data of an input current frame and image data of an immediately preceding frame stored in the frame memory, and compensates for movement using the movement vector.

7. (original): The apparatus of claim 6, wherein the bit rate controller comprises:

a complexity calculator which calculates the complexity for each picture on the basis of the bit amount of each frame in the picture and the quantization parameters;

a remaining bit amount calculator which calculates a remaining bit amount for each picture in proportion to the complexity calculated by the complexity calculator; and

a quantization parameter determination unit which determines the quantization parameter on the basis of the complexity for each picture and the remaining bit amount for each picture calculated by the complexity calculator and the remaining bit amount calculator.